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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventor: Kenichi MIYOSHI et al. Group Art Unit: 2682

Appln. No.: 10/069,396 Examiner: T. A. Tran

Filed: February 26, 2002

For: RADIO BASE STATION APPARATUS AND RADIO
COMMUNICATION METHOD

RESPONSE UNDER 37 CFR § 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Final Rejection dated February 24, 2005,
the Applicants respectfully request reconsideration and allowance
of this application in light of the following remarks.

Claims 10-18 stand rejected, under 35 USC §102(e), as being
anticipated by Scherzer (US 6,347,234). The Applicants
respectfully traverse these rejections.

Claim 10 recites:

A radio base station apparatus comprising:
a fading correlation monitor that monitors a
fading correlation of radio waves received through a
plurality of antenna elements;
a reception method selector that, according to the
fading correlation monitored by the fading correlation
monitor, selects one of:
a directional reception whereby directivity
is formed to receive signals, and

a diversity reception whereby a plurality of signal sequences are combined or selected and received;
a directional receiver that executes the directional reception when the reception method selector selects said directional reception;
a diversity receiver that executes the diversity reception when the reception method selector selects said diversity reception; and
a demodulator that demodulates signals output from the directional receiver or the diversity receiver.

It is submitted that Scherzer fails to disclose the feature recited in claim 10 of selecting either directional reception or diversity reception, in accordance with a monitored fading correlation, and demodulating signals received in accordance with the selected reception method. The Final Rejection proposes that Scherzer discloses this feature in Fig. 1 and identifies controllers 106 and 120 as providing the claimed selectivity (see Final Rejection page 3, first paragraph).

However, as may be seen by inspection of Scherzer's Fig. 1, Scherzer discloses that the signals received by receivers 101, from antenna array 40, are provided to beam formers 112 of each receiving bank 14 (see Scherzer col. 7, lines 1-3). Each receiving bank 14 uses its beam formers 112 to form narrow beams (i.e., directional reception) towards the signal parts associated with a single mobile station (col. 8, lines 19-21). Beam formers 112 feed the spatially filtered (i.e., directionally received) signals to the four fingers of a conventional IS-95 RAKE receiver

113 (col. 8, lines 24-26). The four fingers are each assigned to a different time of signal arrival so as to provide fading mitigation through diversity reception (col. 14, lines 50-53). The fading mitigated signals are then provided to demodulator 114 to reproduce the transmitted data (see Fig. 1).

In summary, Scherzer discloses that the received signals are directionally received and, subsequently, the directionally received signals are diversity received. Both types of reception are necessarily performed on the signals. Scherzer does not disclose selecting between performing directional reception or diversity reception, as recited in claim 10.

With regard to controller 106, Scherzer discloses that controller 106 receives beamforming information from each of the channel estimators 11 (col. 8, lines 12-13). Thus, controller 106 obtains spatial information regarding all the signal parts from all the mobiles (col. 8, lines 13-15). Controller 106 then downloads this information, in the form of coefficients, to the receiving banks 14 which use the spatial information from channel estimators 11 to improve the reception of the signals from the mobiles (col. 8, lines 15-19). Each receiving bank 14 comprises beam formers 112 to form narrow beams towards the signal parts associated with a single mobile (col. 8, lines 19-21). Because the strong signal parts are selectively detected, the beam former

creates a well-matched spatial filter for the incoming signal, including its multipath components (col. 8, lines 21-24). Beam formers 112 feed spatially filtered signals to the four fingers of a conventional IS-95 RAKE receiver 113 (col. 8, lines 24-26).

As may be determined by examination of Scherzer's above-noted disclosure regarding controller 106, controller 106 is not a transmission/reception method selector, as proposed in the Final Rejection, and does not switch between directive transmission/reception, in which signals are formed with a certain directivity, and diversity transmission/reception by which signals from a plurality of branches are combined, as proposed in the Final Rejection (see Final Rejection page 3, lines 2-6). Instead, Scherzer disclose that controller 106 provides coefficients to receiving banks 14, which use the coefficients to improve the reception of the signals from the mobiles stations.

With regard to controller 120, Scherzer discloses that angle of arrival (AOA) and time of arrival (TOA) data are transferred to a central controller 120, by controller 106, where the system determines the most optimal downlink beams configuration (Scherzer col. 8, lines 34-36). As is the case with controller 106, controller 120 is not a transmission/reception method selector, as proposed in the Final Rejection, and does not switch

between directive transmission/ reception, in which signals are formed with a certain directivity, and diversity transmission/reception by which signals from a plurality of branches are combined, as proposed in the Final Rejection (see Final Rejection page 3, lines 2-6).

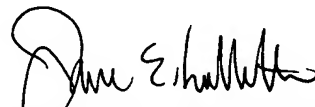
Accordingly, the Applicants respectfully submit that Scherzer does not anticipate the subject matter of claim 10. More specifically, Scherzer does not disclose the feature recited in claim 10 of selecting either directional reception or diversity reception in accordance with a monitored fading correlation and demodulating signals received in accordance with the selected reception method. Claim 17 similarly recites the feature distinguishing apparatus claim 10 from Scherzer, though with respect to a method. For similar reasons that this feature distinguishes claim 10 from Scherzer, so too does it distinguish claim 17. Therefore, allowance of claims 10 and 17 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone

the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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JEL/DWW/att

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